

WHAT IS CLAIMED IS:

(First Solution)

Claim 1. A polarizing plate bonding apparatus comprising cutting means for cutting at least a polarizing plate and an adhesive layer of a strip-shaped film, composed of said polarizing plate and a release film bonded to said polarizing plate with interposition of said adhesive layer, so as to leave the release film uncut, when a forward end side pre-severed end face of said strip-shaped film perpendicular to a longitudinal direction of said strip-shaped film has traveled a length corresponding to a length of a substrate, to form a film piece

release film separating means for separating said release film from the film piece severed by said cutting, and

bonding means for bonding a tacky surface of said film piece, freed of said release film, to a mating position of said substrate so that a forward end side end face of the transported substrate is parallel to the severed end face of said film piece.

Claim 2. The polarizing plate bonding apparatus as defined in claim 1 wherein

said cutting means includes a cutter; and wherein a lower dead point of said cutter is set so as to be

not less than 0 times and not more than 0.5 times the thickness of said release film, whereby layers of said strip-shaped film except the release film with a thickness not less than 10  $\mu\text{m}$  and not larger than 50 $\mu\text{m}$  are severed.  
Claim 3. The polarizing plate bonding apparatus as defined in claim 1 wherein

said release film separating means is a suction conveyor in which a belt having vent holes is placed over a pair of pulleys arranged on both ends of a frame and in which suction is applied from the inner surface of a flat running zone of the belt to suck the strip-shaped film to the belt to transport the so sucked strip-shaped film; and wherein

a suction area on said belt is abutted against the surface of the release film of said strip-shaped film, only the release film being folded to a return zone of the belt by a transport side pulley to separate the release film.  
Claim 4. The polarizing plate bonding apparatus as defined in claim 1 further comprising

film piece supplying means for supplying said film piece freed of said release film in keeping with a bonding position on a substrate being transported.

Claim 5. The polarizing plate bonding apparatus as defined in claim 4 wherein

said film piece supplying means has a function of

sucking the surface of said film piece opposite to a tacky surface thereof.

Claim 6. The polarizing plate bonding apparatus as defined in claim 4 wherein

said release film separating means comprises a separating roll arranged on said film piece supplying means on the surface of said film piece facing the release film surface for thrusting towards said film piece supplying means.

Claim 7. The polarizing plate bonding apparatus as defined in claim 1 wherein

said bonding means hold said film piece and the substrate between a pair of rubber rolls each with a hardness of 60 to 80°.

Claim 8. The polarizing plate bonding apparatus as defined in claim 1 wherein

said bonding means hold said film piece and the substrate between a rubber roll and a metal roll each with a hardness of 60 to 80°.

Claim 9. The polarizing plate bonding apparatus as defined in claim 7 wherein

said bonding means nips said film piece against said substrate with a linear bonding pressure of not larger than 1 kg/cm.

Claim 10. The polarizing plate bonding apparatus as defined

in claim 1 wherein

said bonding means includes a cylindrical surface for sucking the surface opposite to the tacky surface of said film piece freed of said release film, and a suction drum which is rotated for bonding said sucked film piece to said substrate.

Claim 11. A polarizing plate bonding method comprising

a step of cutting at least a polarizing plate and an adhesive layer of a strip-shaped film, composed of said polarizing plate, a direction of an axis of light transmission of which is oriented obliquely relative to a longitudinal direction of said strip-shaped film, and a release film bonded to said polarizing plate, with interposition of said adhesive layer, when a forward end side severed end face of said strip-shaped film perpendicular to the longitudinal direction of said strip-shaped film has traveled a length corresponding to a length of a substrate, to form a film piece so as to leave the release film uncut,

a step of separating said release film from the film piece severed by said cutting, and

a step of bonding a tacky surface of said film piece freed of said release film to a mating position of said substrate so that a forward end side end face of the transported substrate is parallel to the pre-severed end

face of said film piece.

Claim 12. The polarizing plate bonding method as defined in claim 11 wherein

before said step of cutting, a strip-shaped film is reeled out from a roll of said strip-shaped film of a preset width, composed of a polarizing plate, a direction of an axis of light transmission of which is oriented obliquely relative to a longitudinal direction of said strip-shaped film, and a release film bonded to said polarizing plate, with interposition of said adhesive layer, and said strip-shaped film is sending along the longitudinal direction thereof.

Claim 13. The polarizing plate bonding method as defined in claim 11 wherein

before said step of bonding, said film piece is supplied, freed of said release film, in meeting with the position of said substrate transported.

Claim 14. The polarizing plate bonding method as defined in claim 11 wherein

said film piece is supplied from a lower side of said substrate, transported with a substantially planar plate surface, so that said film piece is bonded to a lower surface of said substrate.

Claim 15. A polarizing plate bonding apparatus comprising cutting means for cutting a first strip-shaped film

which is composed of a polarizing plate and a release film bonded to said polarizing plate with interposition of an adhesive layer, and which is supplied from a front plate surface of a substrate being transported, and a second strip-shaped film which is composed of a polarizing plate and a release film bonded to said polarizing plate with interposition of an adhesive layer, and which is supplied from a reverse plate surface of said substrate being transported, when forward side pre-severed end faces along a proceeding direction of the first and second strip-shaped films extending in a direction perpendicular to a longitudinal direction of the first and second strip-shaped film have traveled a distance corresponding to a length of said substrate, in such a manner that at least said polarizing plates and said adhesive layers of said first and second strip-shaped films are severed along a direction perpendicular to the longitudinal direction, with the release film remaining uncut, a direction of an axis of light transmission of the polarizing plate of said second strip-shaped film being perpendicular to a direction of an axis of light transmission of a polarizing plate of said first strip-shaped film when said first and second strip-shaped films are bonded together on the release film sides thereof,;

release film separating means for separating the

release films from a first film piece severed by said cutting of said first strip-shaped film and a second film piece severed by said cutting of said first strip-shaped film; and

bonding means for bonding a tacky surface of said first film piece, freed of said release film, to a mating front side plate surface of said substrate so that the severed end face of said first film piece is parallel to the forward side end face along a transporting direction of said substrate, and for bonding a tacky surface of said second film piece, freed of said release film, to a mating reverse side plate surface of said substrate so that the severed end face of said second film piece is parallel to the forward side end face along the transporting direction of said substrate.

Claim 16. A polarizing plate bonding apparatus comprising

first cutting means for cutting a first strip-shaped film which is composed of a polarizing plate and a release film bonded to said polarizing plate with interposition of an adhesive layer, and which is supplied from a front plate surface of a substrate being transported, when a pre-severed end face along a proceeding direction of the first strip-shaped film extending in a direction perpendicular to a longitudinal direction of the first strip-shaped film has traveled a distance corresponding to a length of said

substrate, in such a manner that at least said polarizing plate and said adhesive layer are severed along a direction perpendicular to the longitudinal direction, with the release film remaining uncut;

second cutting means for cutting a second strip-shaped film which is composed of a polarizing plate and a release film bonded to said polarizing plate with interposition of an adhesive layer, and which is supplied from a reverse plate surface of a substrate being transported, when a pre-severed end face along the proceeding direction of the first strip-shaped film extending in a direction perpendicular to the longitudinal direction of the first strip-shaped film has traveled a distance corresponding to a length of said substrate, in such a manner that at least said polarizing plate and said adhesive layer are severed along a direction perpendicular to the longitudinal direction, with the release film remaining uncut, with the direction of the axis of light transmission of the polarizing plate of the second strip-shaped film being perpendicular to a direction of an axis of light transmission of the polarizing plate of said first strip-shaped film when said first and second strip-shaped films are bonded together on the release film sides thereof,;

first release film separating means for separating the release film from a first film piece severed by said cutting



means from said first strip-shaped film;

second release film separating means for separating the release film from a second film piece severed by said cutting means from said second strip-shaped film; and

bonding means for bonding a tacky surface of said first film piece, freed of said release film, to a mating front side plate surface of said substrate so that the severed end face of said first film piece is parallel to a forward side end face along a transporting direction of said substrate, and for bonding a tacky surface of said second film piece, freed of said release film, to a mating reverse side plate surface of said substrate so that a severed end face of said second film piece is parallel to the forward side end face along the transporting direction of said substrate.

Claim 17. A polarizing plate bonding apparatus comprising

release film separating means for separating a release film from a first strip-shaped film, comprised of a polarizing plate and the release film bonded to said polarizing plate with interposition of an adhesive layer, said first strip-shaped film being supplied from a front plate surface side of a substrate being transported, and from a second strip-shaped film, comprised of a polarizing plate and the release film bonded to said polarizing plate with interposition of an adhesive layer, said second

strip-shaped film being supplied from a reverse plate surface side of the substrate being transported, with a direction of an axis of light transmission of said polarizing plate of said second strip-shaped film being perpendicular to a direction of an axis of light transmission of the polarizing plate of said first strip-shaped film when the release film of said second strip-shaped film is bonded to the release film of said first strip-shaped film;

bonding means for bonding a tacky surface of said first strip-shaped film, freed of said release film, to a mating front plate surface of said substrate so that a proceeding direction of said first strip-shaped film coincides with a transport direction of said substrate, and for bonding a tacky surface of said second strip-shaped film, freed of said release film, to a mating reverse plate surface of said substrate so that a proceeding direction of said second strip-shaped film coincides with a transport direction of said substrate; and

cutting means for cutting said first and second strip-shaped films, bonded to both surfaces of said substrate by said bonding means, in a direction parallel to the forward end face or a rear end face along the transport direction of said substrate.

Claim 18. A polarizing plate bonding apparatus comprising  
first release film separating means for separating a

release film from a first strip-shaped film, comprised of a polarizing plate and the release film bonded to said polarizing plate with interposition of an adhesive layer, said first strip-shaped film being supplied from a front plate surface of a substrate being transported:

second release film separating means for separating a release film from a second strip-shaped film, comprised of a polarizing plate and the release film bonded to said polarizing plate with interposition of an adhesive layer, said second strip-shaped film being supplied from a reverse plate surface of the substrate being transported, with a direction of an axis of light transmission of said polarizing plate of said second strip-shaped film being perpendicular to a direction of an axis of light transmission of the polarizing plate of said first strip-shaped film when the release film of said second strip-shaped film is bonded to the release film of said first strip-shaped film;

bonding means for bonding a tacky surface of said first strip-shaped film, freed of said release film, to a mating front plate surface of said substrate so that a proceeding direction of said first strip-shaped film coincides with a transport direction of said substrate, and for bonding a tacky surface of said second strip-shaped film, freed of said release film, to a mating reverse plate surface of said substrate so that the proceeding direction of said second

strip-shaped film coincides with the transport direction of said substrate; and

cutting means for cutting said first and second strip-shaped films, bonded to both surfaces of said substrate by said bonding means, in a direction parallel to the forward end face or a rear end face along the transport direction of said substrate.

Claim 19. A polarizing plate bonding apparatus comprising

first transport means for transporting said substrate with one end surface thereof perpendicular to a proceeding direction;

first bonding means for bonding a tacky surface of a first film piece, having a polarizing plate, to a mating plate surface piece of said substrate so that a pre-severed end face of said first film piece is parallel to an end face along the proceeding direction of said substrate transported by said first transporting means;

second transporting means for transporting said substrate transported by said first transporting means along a direction perpendicular to a transport direction by said first transport means; and

second bonding means for bonding a tacky surface of a second film piece to a mating plate surface of said substrate opposite to the surface thereof to which has been bonded said first film piece, so that a pre-severed end face

of said second film piece is parallel to the end face along the proceeding direction of said substrate transported by said second transport means; said second film piece having a polarizing plate, and being supplied from a plate surface opposite to the surface bonded to said first film piece of said substrate transported by said second transport means; the direction of the axis of light transmission of said polarizing plate of said second film piece being perpendicular to a direction of an axis of light transmission of said polarizing plate of said first film piece when the tacky surface of said polarizing plate of said second film piece is bonded to the tacky surface of said polarizing plate of said first film piece.

Claim 20. A polarizing plate bonding apparatus comprising  
first transport means for transporting a substrate with an end face thereof perpendicular to the proceeding direction;

first cutting means for cutting at least a polarizing plate and an adhesive layer of a first strip-shaped film, composed of said polarizing plate and a release film bonded to said polarizing plate with the interposition of said adhesive layer, so as to leave the release film uncut, when a forward end side pre-severed end face of said first strip-shaped film perpendicular to a longitudinal direction of said first strip-shaped film has traveled a length

corresponding to a length of a substrate;

first release film separating means for separating said release film from the first film piece severed by said first cutting means, and

first bonding means for bonding the tacky surface of said first film piece freed of said release film to a mating plate surface piece of said substrate so that a pre-severed end face of said first film piece will be parallel to a forward end side end face along a proceeding direction of the substrate transported by said first transport means;

second transporting means for transporting said substrate transported by said first transporting means along a direction perpendicular to the transport direction of said first transport means;

second cutting means for cutting at least a polarizing plate and an adhesive layer of the second strip-shaped film, composed of said polarizing plate and a release film bonded to said polarizing plate with the interposition of said adhesive layer, so as to leave the release film uncut, when a forward end side pre-severed end face of said second strip-shaped film perpendicular to a longitudinal direction thereof has traveled a length corresponding to a length of a substrate transported by said second transport means; said second strip-shaped film being supplied from a plate surface side of said substrate transported by said

second transport means which is opposite to a substrate surface bonded to said first film piece; an axis of light transmission of said polarizing plate of said second strip-shaped film being perpendicular to an axis of light transmission of said polarizing plate of said first strip-shaped film when the release film side of said second strip-shaped film is bonded to the release film side of said first strip-shaped film;

second release film separating means for separating said release film from the second film piece severed by said second cutting means; and

second bonding means for bonding a tacky surface of said second film piece freed of said release film to the plate surface of said substrate opposite to the substrate surface bonded to said first film piece, so that a forward end face along the proceeding direction of said substrate transported by said second transport means is parallel to a pre-severed end face of said second film piece.

Claim 21. A polarizing plate bonding apparatus comprising

first transport means for transporting a substrate with an end face thereof perpendicular to a proceeding direction;

first cutting means for cutting along a direction parallel to a forward or rear end face along a transport direction of said substrate to a mating surface piece of

which has been bonded a tacky surface of a first strip-shaped film having a polarizing plate, so that a proceeding direction of the first strip-shaped film is parallel to an end face along the proceeding direction of the substrate transported by said first transport means;

second transport means for transporting the substrate transported by said first transport means along a direction perpendicular to the transport direction by said first transport means; and

second cutting means for cutting along a direction parallel to a forward or rear end face along the transport direction of said substrate, a tacky surface of a second strip-shaped film being bonded to a surface of said substrate opposite to the surface thereof bonded to the film piece of the first strip-shaped film, so that a severed end face of the second strip-shaped film is parallel to an end face along the proceeding direction of the substrate transported by said second transport means; said second strip-shaped film having a polarizing plate; said second strip-shaped film being supplied from a plate surface side of said substrate transported by said second transport means which is opposite to a substrate surface bonded to said first film piece; an axis of light transmission of said polarizing plate of said second strip-shaped film being perpendicular to an axis of light transmission of said polarizing plate of said



first strip-shaped film when the release film side of said second strip-shaped film is bonded to the release film side of said first strip-shaped film.

Claim 22. A polarizing plate bonding apparatus comprising  
first transport means for transporting a substrate with one end face thereof perpendicular to a proceeding direction;

first release film separating means for separating a release film from a first strip-shaped film, comprised of a polarizing plate and said release film bonded thereto with interposition of an adhesive film;

first bonding means for bonding a tacky surface of said first strip-shaped film freed of said release film, to a mating plate surface piece side of said substrate, so that a proceeding direction of said first strip-shaped film coincides with a proceeding direction of said substrate transported by said first transport means;

first cutting means for cutting said first strip-shaped film, bonded to said substrate by said first bonding means, along a direction parallel to a forward or rear end face along the transport direction of said substrate transported by said first transport means;

second transport means for transporting said substrate, transported by said first transport means, along a direction perpendicular to the transport direction by said first

transport means;

second release film separating means for separating a release film from a second strip-shaped film comprised of a polarizing plate and said release film bonded thereto with interposition of an adhesive film; said second strip-shaped film being supplied from a plate surface opposite to a surface bonded to said first film piece of said substrate transported by said second transport means; a direction of an axis of light transmission of said polarizing plate of said second film piece being perpendicular to a direction of an axis of light transmission of said polarizing plate of said first film piece when the release film of said polarizing plate of said second film piece is bonded to the release film of said polarizing plate of said first film piece;

second bonding means for bonding the tacky surface of said second film piece freed of said release film to a mating plate surface piece of said substrate opposite to a surface thereof bonded to the film piece of said first strip-shaped film so that a proceeding direction of said second strip-shaped film coincides with a proceeding direction of the substrate transported by said second transport means; and

second cutting means for cutting said second strip-shaped film, bonded by said second bonding means to

said substrate, along a direction parallel to a forward end face or a rear end face along the transport direction of said substrate transported by said second transport means.

Claim 23. The polarizing plate bonding apparatus as defined in claim 19 further comprising

inverting means for inverting the substrate, transported by said first transport means, with said first film piece bonded thereto, upside-down, so that the end face along the proceeding direction of said as-inverted substrate will be perpendicular to the proceeding direction.

Claim 24. The polarizing plate bonding apparatus as defined in claim 23 wherein

said first and second transport means transport the substrate with the substrate surface in a horizontal state;

said first and second cutting means are arranged at a level lower than said substrate transported by said first and second transport means;

said first bonding means bonding the first film piece, supplied from below the substrate transported by said first transport means, to said substrate; and wherein

said second bonding means bonding the second film piece, supplied from below the substrate transported by said second transport means, to said substrate.

Claim 25 . A method for bonding a polarizing plate comprising

a step of cutting a first strip-shaped film including a polarizing plate and a release film bonded thereto with interposition of an adhesive layer, and a second strip-shaped film including a polarizing plate and a release film bonded thereto with interposition of an adhesive layer, when pre-severed end faces of said first and second strip-shaped films along a proceeding direction thereof perpendicular to a longitudinal direction have traveled a distance corresponding to a length of a substrate, so that at least said polarizing plates and the adhesive layers of said first and second strip-shaped films are severed along a direction perpendicular to a longitudinal direction, with the exception of said release layer which remains uncut; said first strip-shaped film being supplied from a front plate surface side of substrate being transported, said second strip-shaped film being supplied from a reverse plate surface side of a substrate being transported; a direction of an axis of light transmission of said polarizing plate of said second strip-shaped film being perpendicular to a direction of an axis of light transmission of said polarizing plate of said first strip-shaped film when the release film of said second strip-shaped film is bonded to the release film of said first strip-shaped film;

a step of separating said release films of said first and second strip-shaped films, severed by said cutting of

said first and second strip-shaped films; and

a step of bonding a tacky surface of said first film piece, freed of said release film, to a mating front side surface of said first strip-shaped film, so that the severed end face of said first film piece is parallel to the forward end face along the transport direction of said substrate, and bonding a tacky surface of said second film piece, freed of said release film, to a mating reverse side surface of said second strip-shaped film, so that the severed end face of said second film piece is parallel to the forward end face along the transport direction of said substrate,

Claim 26. A method for bonding a polarizing plate comprising

a step of separating a release film from each of a first strip-shaped film and a second strip-shaped film, said first strip-shaped film including a polarizing plate and the release film bonded thereto with interposition of an adhesive layer, said first strip-shaped film being supplied from a front plate surface side of a substrate being transported; said second strip-shaped film including a polarizing plate and a release film bonded thereto with interposition of an adhesive layer, said second strip-shaped film being supplied from a reverse plate surface side of a substrate being transported; a direction of an axis of light transmission of said polarizing plate of said second strip-shaped film being perpendicular to the direction of

the axis of light transmission of said polarizing plate of said first strip-shaped film when the release film of said second strip-shaped film is bonded to the release film of said first strip-shaped film;

a bonding step of bonding a tacky surface of said first strip-shaped film, freed of said release film, to a mating front plate surface of said substrate so that the proceeding direction of said first strip-shaped film coincides with the transport direction of said substrate, and bonding a tacky surface of said second strip-shaped film, freed of said release film, to a mating reverse plate surface of said substrate so that a proceeding direction of said second strip-shaped film coincides with a transport direction of said substrate; and

a cutting step of severing said first strip-shaped film and the second strip-shaped film, bonded to both surfaces of said substrate by said bonding means, along a direction parallel to forward or rear end face along the transport direction of said substrate.

Claim 27. A method for bonding a polarizing plate comprising

a step of transporting a substrate with one end face of said substrate perpendicular to a proceeding direction;

a step of bonding a tacky surface of a first film piece, having a polarizing plate, to a mating plate surface piece of said substrate so that a severed end face of said first

film piece is parallel to a forward side end face along a transport direction of said substrate;

a step of changing the direction of transport of the transported substrate and transporting the substrate along the so changed direction; and

a step of bonding a tacky surface of said second film piece to a plate surface of said substrate opposite to a substrate surface to which said first film piece has been bonded, so that a severed end face of said second film piece is parallel to a forward end face along the transport direction of said substrate; said second film piece including a polarizing plate and being supplied from the plate surface of said substrate opposite to the substrate surface to which said first film piece has been bonded; a direction of an axis of light transmission of said polarizing plate of said second strip-shaped film being perpendicular to a direction of an axis of light transmission of said polarizing plate of said first strip-shaped film when the tacky surface of said polarizing plate is bonded to the tacky surface of said first strip-shaped film

Claim 28. A method for bonding a polarizing plate comprising

a step of transporting a substrate with one end face of said substrate perpendicular to a proceeding direction;

a step of cutting along a direction parallel to a forward or rear side end face along the transport direction

of said substrate, so that a tacky surface of a first strip-shaped film, having a polarizing plate, bonded to one mating plate surface of said substrate, so that a proceeding direction of the first strip-shaped film is parallel to a forward side end face along the transport direction of said substrate;

a second transport step of changing the direction of transport of the transported substrate and transporting the substrate along the so changed direction; and

a step of cutting along a direction parallel to a forward or rear end face along the transport direction of said substrate, to a plate surface of which opposite to a plate surface carrying the film piece of the first strip-shaped film has been bonded a tacky surface of said second strip-shaped film, so that the severed end face of the second strip-shaped film is parallel to an end face along the proceeding direction of the substrate; said second strip-shaped film having a polarizing plate; said second strip-shaped film being supplied from a plate surface side of said substrate transported by said second transport means which is opposite to a substrate surface bonded to said first film piece; an axis of light transmission of said polarizing plate of said second strip-shaped film being perpendicular to an axis of light transmission of said polarizing plate of said first strip-shaped film when the release film side



of said second strip-shaped film is bonded to the release film side of said first strip-shaped film.

Claim 29. A polarizing plate bonding apparatus comprising release film separating means for separating a release film from a strip-shaped film comprised of a polarizing plate and the release film bonded thereto with interposition of an adhesive layer, said strip-shaped film being supplied from one plate surface of a substrate being transported;

bonding means for bonding a tacky surface of said strip-shaped film, freed of said release film, so that a proceeding direction of said strip-shaped film coincides with the transport direction of said substrate; and

cutting means for cutting said strip-shaped film, bonded to one surface of said substrate by said bonding means, along a direction parallel to a forward or rear end face along the transport direction of said substrate.

Claim 30. The polarizing plate bonding apparatus as defined in claim 29 wherein

said cutting means includes two blades simultaneously cutting into a surface of said strip-shaped film bonded to said substrate from a perpendicular direction and severing along a direction perpendicular to the transport direction of said substrate, said two blades being spaced apart a preset distance from each other.

Claim 31. The polarizing plate bonding apparatus as defined

in claim 30 wherein

said cutting means includes suction means arranged between said two blades for sucking unneeded cut chips of the severed strip-shaped film.

Claim 32. A method for bonding a polarizing plate comprising a step of separating a release film from a strip-shaped film comprised of a polarizing plate and the release film bonded thereto with interposition of an adhesive layer, said strip-shaped film being supplied from one plate surface of a substrate being transported;

a step of bonding a tacky surface of said strip-shaped film, freed of said release film, to a mating plate surface of said substrate, so that a proceeding direction of said strip-shaped film coincides with the transport direction of said substrate; and

a step of severing said strip-shaped film, bonded to one surface of said substrate by said bonding, along a direction parallel to a forward or rear end face along the transport direction of said substrate.

Claim 33. A polarizing plate bonding apparatus comprising release film separating means for separating a release film from a strip-shaped film comprised of a polarizing plate and the release film bonded thereto with interposition of an adhesive layer, said strip-shaped film being supplied from one plate surface of the substrate transported, in a

state such that at least the polarizing plate and the adhesive film are severed so that at least one side of a rectangle of said strip-shaped film in a film surface area registering with said substrate is perpendicular to a longitudinal direction of the film, with the release film remaining uncut;

bonding means for bonding at least a tacky surface within said rectangle of said strip-shaped film, freed of said release film, to a mating plate surface of said substrate, so that a proceeding direction of said strip-shaped film coincides with a transport direction of said substrate; and

selvedge separating means for separating a selvedge of said strip-shaped film other than an inner area of said rectangle from said substrate.

Claim 34. The polarizing plate bonding apparatus as defined in claim 33 wherein

cutting means for cutting at least a polarizing plate and an adhesive layer of a strip-shaped film, comprised of the polarizing plate and a release layer bonded thereto with interposition of the adhesive layer, so as to leave the release film uncut, said strip-shaped film being supplied from one plate surface side of a substrate being transported, so that at least one side of a rectangle in a film surface area mating with the substrate is perpendicular to a

longitudinal direction of the film, and

said release film separating means is separating said release film from the strip-shaped film cut by the cutting means.

Claim 35. The polarizing plate bonding apparatus as defined in claim 33 wherein

said bonding means is used common by said selvedge separating means.

Claim 36. The polarizing plate bonding apparatus as defined in claim 33 further comprising

position registration means for detecting the position of an inner portion of the rectangle of said strip-shaped film being supplied and a position of said substrate being transported to effect position registration of the tacky surface of the inner portion of the rectangle with a mating portion of the rectangle.

Claim 37. A polarizing plate bonding apparatus comprising

release film separating means for separating a release film from a strip-shaped film, comprised of a polarizing plate and the release layer bonded thereto with interposition of an adhesive layer, said strip-shaped film being supplied from one plate surface of a substrate being transported;

bonding means for bonding at least a tacky surface of said strip-shaped film, freed of said release film, to a

matting plate surface of said substrate, so that a proceeding direction of said strip-shaped film coincides with the transport direction of said substrate;

cutting means for cutting said strip-shaped film within an area in which said strip-shaped film has been bonded to said substrate, within a rectangle corresponding to said substrate, so that at least one side of the rectangle is perpendicular to a longitudinal direction; and

selvedge separating means for separating a selvedge of said strip-shaped film other than an inner area of said rectangle from said substrate.

Claim 38. The polarizing plate bonding apparatus as defined in claim 33 further comprising

transporting means for transporting said substrate towards said bonding means or an extension thereof with one end face of said substrate perpendicular to the proceeding direction.

Claim 39. The polarizing plate bonding apparatus as defined in claim 33 wherein

said selvedge is a continuum of distinct selvedges;

said selvedge separating means continuously separate said selvedges.

Claim 40. A method for bonding a polarizing plate comprising

a step of separating a release film from a strip-shaped film comprised of a polarizing plate and the release film

bonded thereto with interposition of an adhesive layer and supplied from one plate surface of a substrate being transported, in a state in which at least the polarizing plate and the release film are pre-severed, with the release film remaining uncut, so that at least one side of a rectangle corresponding in profile to said substrate in an area of a film surface is perpendicular to a longitudinal direction of the film;

a step of bonding a tacky surface of an inner portion of said rectangle of said strip-shaped film, freed of said release film, to a mating plate surface of said substrate, so that the proceeding direction of said strip-shaped film coincides with the transport direction of said substrate; and

a step of separating a selvedge of said strip-shaped film other than said inner portion of the rectangle, from said substrate.

Claim 41. The method for bonding a polarizing plate as defined in claim 40 wherein

a step of cutting at least a polarizing plate and an adhesive layer from a strip-shaped film, comprised of a polarizing plate and the release film bonded thereto with interposition of said adhesive layer, and supplied from one plate surface of a substrate being transported, with the release film remaining uncut, so that at least one side of

a rectangle corresponding in profile to said substrate in an area of a film surface is perpendicular to a longitudinal direction of the film, and

said release film is separated from the strip-shaped film severed in said of step cutting.

Claim 42. The method for bonding a polarizing plate as defined in claim 40 wherein bonding of said inner portion of said rectangle and the separation of said selvedge are carried out simultaneously.

Claim 43. A method for bonding a polarizing plate comprising

a step of separating a release film from a strip-shaped film comprised of a polarizing plate and the release film bonded thereto with interposition of an adhesive film, said strip-shaped film being supplied from one plate surface of a substrate transported;

a step of bonding at least a tacky surface of said strip-shaped film, freed of said release film, to a mating plate surface of said substrate, so that a proceeding direction of said strip-shaped film coincides with a transport direction of said substrate;

a step of cutting said strip-shaped film within an area in which the strip-shaped film is bonded to said substrate, within a rectangle mating in profile to said substrate, so that at least one side of the rectangle is perpendicular to a longitudinal direction of the film; and

a step of separating a selvage of said strip-shaped film other than an inner portion of said rectangle from said substrate.

(Common Portion)

Claim 44. The polarizing plate bonding apparatus as defined in claim 1 wherein

transporting means for transporting said substrate towards said bonding means or in the direction of extension thereof as one end face of said substrate is kept to be at right angles to the proceeding direction.

Claim 45. The polarizing plate bonding apparatus as defined in claim 44 wherein

said transporting means sucks and holds said substrate to transport said substrate as one end face of said substrate is kept to be at right angles to the proceeding direction, said transporting means also operating as a transport table as a support for bonding said film piece to said substrate.

Claim 46. The polarizing plate bonding apparatus as defined in claim 44 wherein

said transporting means is a roller conveyor comprised of an array of plural rolls or a wheel conveyor comprised of an array of plural wheels.

Claim 47. The polarizing plate bonding apparatus as defined in claim 1 further comprising



film supplying means for reeling out said strip-shaped film from a roll of a preset width of said strip-shaped film to supply the film in the longitudinal direction thereof.

Claim 48. The polarizing plate bonding apparatus as defined in claim 44 wherein

said substrate is substantially square-shaped and of a fixed size; and wherein

said transporting means arrays transports said plural substrates arrayed in tandem in the longitudinal direction.

Claim 49. The polarizing plate bonding apparatus as defined in claim 44 wherein

said transporting means transports said substrate in a substantially horizontal position;

said cutting means and said release film separating means are arranged on a lower side of said substrate transported by said transporting means; and wherein

said bonding means bonds said film piece, supplied from the lower side of the substrate, transported by said transporting means, to said substrate.

Claim 50. The polarizing plate bonding apparatus as defined in claim 49 wherein

said film supplying means is arranged on a lower side of said substrate transported by said transporting means.

Claim 51. The polarizing plate bonding apparatus as defined

in claim 49 wherein

said cutting means cuts from the lower surface of the strip-shaped film supplied.

Claim 52. The polarizing plate bonding apparatus as defined in claim 44 wherein

said cutting means operates in a certain area in keeping with the transport speed and direction of said substrate on said transport means.

Claim 53. The polarizing plate bonding apparatus as defined in claim 44 wherein

when the strip-shaped film is bonded to said substrate by said bonding means, said transport means transports said substrates with the forward and rear end faces along the transport direction of a given substrate abutting against the forward or rear end faces of neighboring substrates.

Claim 54. The polarizing plate bonding apparatus as defined in claim 1 wherein

in said strip-shaped film, a phase difference film, having an axis of orientation perpendicular or parallel to the longitudinal direction of the strip-shaped film, is interposed between the polarizing plate and the adhesive layer.

Claim 55. The polarizing plate bonding apparatus as defined in claim 1 wherein

said polarizing plate having an axis of light

transmission oriented obliquely relative to the longitudinal direction of a film is used as the polarizing plate.

Claim 56. The polarizing plate bonding apparatus as defined in claim 1 wherein

said polarizing plate having an axis of light transmission oriented parallel to the longitudinal direction of a film is used as the polarizing plate.

Claim 57. The polarizing plate bonding apparatus as defined in claim 1 wherein

said polarizing plate having an axis of light transmission oriented at right angles to the longitudinal direction of a film is used as the polarizing plate.